Practical Interpretation of Practices

-or-

Risk Based Process Improvement

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The Problem

- How can we ensure that CMMI/CMM practices apply directly to our business?
- Are our alternative practices good enough?
- How can we accurately determine if practices are not applicable (in the CMM)?

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Using the CMMI

- "Either the practices as described, or **acceptable alternatives** to them, are expected to be present in the planned and implemented processes of the organization before goals can be considered satisfied." [CMMI, Page 14]
- "Not Applicable" is not an option in the CMMI

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Using the SW-CMM

- "The key practices in the CMM, however, **must be interpreted** in light of a project's or organization's business environment and specific circumstances." [CMM Practices Pg 0-76]
- "**Alternative practices** may accomplish the goals of the key process area." [CMM Practices Pg 0-27]
- **"Not Applicable"** may be used during a CBA IPI to designate key practices that may not be applicable to the business of the organization.

Addressing Risk

- Premise 1: **all** CMMI/CMM practices help to address a risk to the project or organization
- Premise 2: appropriate interpretation of this risk facilitates practical implementation of practices
- Premise 3: addressing the implied risk in the implementation enables our business to be faster, better, cheaper, and more secure

The Process

- For each practice:
  - Identify the risk being addressed
  - Evaluate how to best address the risk in your project/organization
  - Compare your implementation to the related goal(s)
  - Document your justification using logic and the business risk being addressed

Identify the Risk

- What could happen if the practice were not implemented?
- What problems can be avoided by implementing the practice?
- Validate your results
  - Ask
    - People who use the practice
    - People who are affected by the practice
    - A co-worker
    - Your boss

Address the Risk

- Use risk common mitigation techniques
- Develop an action plan that will eliminate or reduce the risk from occurring
  - What makes sense in YOUR organization?
  - Use the sub-practices as a tailorable guideline
  - Ask
    - People who use the practice
    - People who are affected by the practice
    - A co-worker
    - Your boss

Goal Comparison

- Your final solution
  - MUST relate back to the goal of the practice
    - Both SCAMPIs and CBA IPIs require that the **goals** be rated with information from the practices
  - MUST address the basic intent (risk) of the original practice
    - Implementations can sometimes take on a life of their own and deviate from the original intent
    - Some deviations identify **additional** risks that need to be addressed – that's ok
- Goals comparisons are usually not a problem, but be safe and check

Document the Results

- Document the logical justification of your solution and how it addresses the risk identified by the practice
  - Helps future persons understand why the choices were made
  - Provides a foundation on which to build other improvements
  - Documents the business logic for an assessor/appraiser

Variations on a Theme

- Primarily used to interpret practices so that implementations are directly related to business needs
- Also used to
  - Create “acceptable alternative” practices when implementing the CMMI or CMM
  - Determine when a CMM practice is simply “not applicable” to the business of the organization

Example 1 - CMMI

- "Establish and maintain estimates of the attributes of the work products and tasks." [PP SP1.2-1]
  - Risk – not knowing the attributes [such as size, connectivity, complexity, and structure] of the components of a project could lead to poor effort and cost estimates
  - Mitigation – develop an attribute estimation method that can help this organization improve the accuracy of effort and cost estimates
  - Validation – Review the risk and the proposed mitigation with stakeholders
    - Who are the stakeholders for this risk?

Example 2 - CMM

- "Estimates for the size of the software work products (or changes to the size of software work products) are derived according to a documented procedure" [SPP AC9]
  - Risk – not knowing the size of the components of a project could lead to poor effort and cost estimates
  - Mitigation – develop a size estimation method that can help improve the accuracy of effort and cost estimates
  - Validation – Review the risk and the proposed mitigation with stakeholders
    - Who are the stakeholders for this risk?

Example – Your Turn

- Name any CMMI/CMM practice that doesn't seem practical
- Identify the risk that it may help to prevent or minimize
- Choose an implementation based on that risk

Summary

- If all CMMI/CMM practices address potential risks in the organization
- And if the implied risks could affect the speed, quality, or cost of a project
- Then it makes good business sense to use this simple method to implement practices in a way that mitigates the implied risks for a particular organization

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